VOL. 5 NO. 2
FEBRUARY 1983

neat notes

THE NEWSLETTER OF NEW ENGLAND APPLE TREE

February 1983 N.E.A.T. Meeting

The February meeting will be held at 7:30 P.M. on the third Wednesday of the month (as usual), February 16, 1983 at the Mitre cafeteria. Mitre is on rte 62 in Bedford Ma. Take route 3 north from rte 128 to the first exit (rte 62).

Note: March meeting will be on the 30th which is the fifth Wednesday of the month. Watch out.

FEBRUARY'S PROGRAM

Roland Guilbault will review WORD HANDLER II at this month's meeting using an overhead projector and transparencies to improve your view and then demonstrate and answer questions using an Apple and CRT. Please see his feature article on page 9 of this issue for details on this package. Roland has followed the outline suggested in Call - A.P.P.L.E., September, 1980 and you can now compare his assesment of WORD HANDER II with any of the many word processors already reviewed by them.

FUTURE SCHEDULE IS TENTATIVELY AS FOLLOWS:

March 30,1983----------
*** WATCH THE DATE *** EXCEPTION ***

April 20,1983----------

May 18,1983----------

June 15,1983----------

July 20,1983----------

August 17,1983----------

September 21,1983-------

NEW FROM FRANKLIN

THE ACEWriter Word Processing Program

ACEWriter transforms your Franklin ACE computer into a sophisticated word processor that is easy to understand and operate. With it, you can efficiently write, revise, reorganize and print letters, memos, specifications, contracts and other documents.

ACEWriter Features

- ***Easy to Learn***

  Learning time, for any application, is shorter on a Franklin ACE computer because the keyboard is arranged typewriter-style, not computer style. The ACEWriter word processing package was designed to take advantage of this important feature. It acts like a typewriter and quickly becomes second nature.

- ***What You See is What You Print***

  Once the text has been justified, you see exactly what will be printed. There are no inverse characters, special symbols or flashing characters.

- ***80 Column Window***

  The standard document is 80 columns wide but most terminals only display 40 columns. ACEWriter solves this problem by using the screen as a window that slides horizontally and vertically, allowing you to see all four edges of the paper as you type.

- ***Simplified Menus***

  ACEWriter simplifies operation by dividing the menus into two categories—a main control menu and subsidiary menus for specific tasks such as formatting, printing and filing.

- ***Simplified Typing***

  You never need to hit RETURN when your text reaches the right margin. The last word is automatically moved to the next line. Typing time is reduced because there is no need to even look at the screen.

- ***Type-Ahead Buffer***

  ACEWriter includes a type-ahead buffer that stores keystrokes to stay ahead of fast typists.

- ***Global Search***

  ACEWriter will automatically search through a document when you want to change a word that appears in many places.

- ***And More***

  ACEWriter makes it easy to manipulate entire paragraphs, copy a line and make additions and deletions. It even saves deleted lines so you can get them back if the deletion was accidental.

ACEWriter Package

ACEWriter is compatible with Franklin ACE 100, 1000 and 1200 computers.

You receive:

- Write-protected ACEWriter diskette
- ACEWriter instruction manual
- Mailer for obtaining back-up diskette

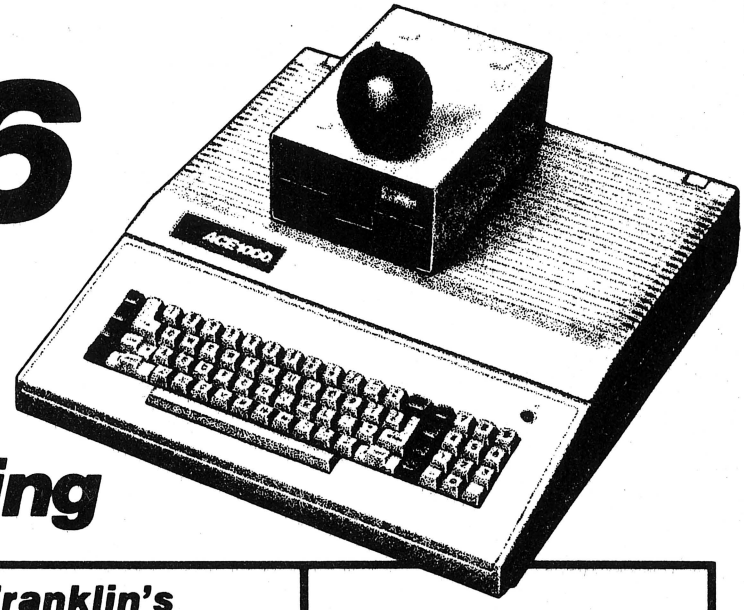
COMPUTER DATA SERVICES
P.O. Box 696, Route 122
Amherst, NH 03031
(603) 673-7375

COMPUTER DATA SERVICES

ACE1000 SPECIAL

ONLY

$ 1666



With ACEWriter Word Processing

Feature	Franklin's ACE 1000 SPECIAL	APPLE® II
Memory	64K	48K
Word Processing	Included	Extra Cost
Disk Drive	Included	Extra Cost
Disk Controller	Included	Extra Cost
Numeric Pad	Included	Extra Cost
Built-in Fan	Included	Extra Cost
Upper and Lower Case	Included	Extra Cost
VisiCalc® Keys	Included	Not Available
Auto Repeat Keys	Included	Not Available

Declare your independence from skyrocketing prices! CDS's $1666 special includes the sensational ACE 1000 professional personal computer and the revolutionary new ACEWriter package, a sophisticated word processor that is easy to understand and operate. And, you can choose from an enormous selection of other programs and peripherals because the ACE 1000 is hardware - and software-compatible with the Apple II. The $1666 independence special expires January 31, 1983 or until supplies are exhausted.

REMEMBER THE NH TAX ADVANTAGE!

CDS

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P.O. Box 696, Route 122
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Apple is a registered trademark of Apple Computer Inc.
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THE NEWSLETTER OF NEW ENGLAND APPLE TREE

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Mr. -
19 District Road
Acton, MA 01720

N.E.A.T.
Steering Committee Meeting
January 12, 1983
By Jeannine Giffee

Present, Jerry Connelly, Dave Reed, Larry Starnes, Joe Stivaletta, Jeannine Giffee, and Doug McMullin.

The evening was spent preparing mailers to inform club members and other possible interested parties of the January N.E.A.T. program.

Other topics discussed included renewal of club membership and the newsletter.

N.E.A.T. Meeting
January 19, 1983
By Jeannine Giffee

Present, Dave Reed, Lou Tarsa, Larry Starnes, Jeannine Giffee, and Joe Stivaletta.

ANNOUNCEMENTS -
Dave Reed announced that persons whose membership expired at the end of 1982 should renew soon. These people will receive only one copy of N.E.A.T. Notes beyond their expiration date.

Bob Ramsdell announced that meetings for the North Shore Apple Users Group will be meeting on the 2nd Saturday of the month at Computer City. Next month's meeting is on Business Applications and the APPLE IIe.

Bob Ramsdell - 1983 tax application models for VISICALC are now ready. See Bob.

Mike Sarles announced that he has successfully used DATATRANS and that it was recently reviewed in SofTalk.

Mitre needs the cafeteria on March 16. N.E.A.T. has rescheduled the March meeting for March 30.

Richard Amirault has six EAMON Adventure disks that he will be copying at the February meeting for interested members. After this they will be donated to the library.

After the announcements Stacey Bressler and Keith Fox from the APPLE Regional Sales Office gave a presentation of APPLE's two new products, namely the APPLE IIe and the LISA. Here is an overview of the meeting.

The APPLE marketplace -

According to Keith Fox, APPLE'S sales have been going up on a steady curve with sales for 1980 at $117M, 1981 at $334M, and $585M in 1982. APPLE projects sales of $214M in the first quarter of 1983 from APPLE IIs and APPLE IIIs alone. The sales distribution breakdown in 1982 was described as 92% retail distribution, and 8% other programs which included OEM programs and National Accounts programs. Keith also gave the percentage breakdown of applications within the APPLE marketplace.

about 50% Business Applications
20-25% Educational
15-20% Scientific/Industrial
10-15% Home and Hobby

continued on next page

The APPLE IIe -

Both Keith Fox and Stacey Bressler gave input on the description of the APPLE IIe. The "e" stands for "enhanced". In effect this computer has been designed to replace the APPLE II (which has been stopped in production). The APPLE IIe has the following features:

- Typewriter-style full ASCII keyboard, 63 keys, all 128 ASCII codes, Upper and Lower case, and an Auto-repeat feature.
- Special purpose keys: single stroke UP, DOWN, LEFT, and RIGHT ARROW keys, TAB, and DELETE; Programmable OPEN-APPLE and CLOSE-APPLE; plus CTRL, SHIFT, CAPS LOCK, ESCAPE, and RESET.
- 6502A CPU, 64K of RAM, 16K of ROM, BASIC built into the

ORIGINAL APPLE ADVERTISEMENT

For those of you who have never seen the Apple I Computer, (only 200 were made)... here's a copy of an advertisement actually showing the unit (kit).

YOU'VE COME A LONG WAY BABY!

Apple Introduces the First Low Cost Microcomputer System with a Video Terminal and 8K Bytes of RAM on a Single PC Card.

The Apple Computer A truly complete microcomputer system on a single PC board Based on the MOS Technology 6502 microprocessor, the Apple also has a built-in video terminal and sockets for 8K bytes of on-board RAM memory. With the addition of a keyboard and video monitor, you'll have an extremely powerful computer system that can be used for anything from developing programs to playing games or running BASIC.

Combining the computer, video terminal and dynamic memory on a single board has resulted in a large reduction in chip count, which means more reliability and lowered cost. Since the Apple comes fully assembled, tested & burned-in and has a complete power supply on-board, initial set-up is essentially "hassle free" and you can be running within minutes At $666 66 (including 4K bytes RAM!) it opens many new possibilities for users and systems manufacturers

You Don't Need an Expensive Teletype.

Using the built-in video terminal and keyboard interface, you avoid all the expense, noise and maintenance associated with a teletype. And the Apple video terminal is six times faster than a teletype, which means more throughput and less waiting. The Apple connects directly to a video monitor (or home TV with an inexpensive RF modulator) and displays 960 easy to read characters in 24 rows of 40 characters per line with automatic scrolling. The video display section contains its own 1K bytes of memory, so all the RAM memory is available for user programs And the Keyboard Interface lets you use almost any ASCII-encoded keyboard

The Apple Computer makes it possible for many people with limited budgets to step up to a video terminal as an I/O device for their computer.

No More Switches, No More Lights.

Compared to switches and LED's, a video terminal can display vast amounts of information simultaneously. The Apple video terminal can display the contents of 192 memory locations at once on the screen. And the firmware in PROMS enables you to enter, display and debug programs (all in hex) from the keyboard, rendering a front panel unnecessary. The firmware also allows your programs to print characters on the display, and since you'll be looking at letters and numbers instead of just LED's, the door is open to all kinds of alphanumeric software (i.e., Games and BASIC).

8K Bytes RAM in 16 Chips!

The Apple Computer uses the new 16-pin 4K dynamic memory chips. They are faster and take ¼ the space and power of even the low power 2102's (the memory chip that everyone else uses). That means 8K bytes in sixteen chips. It also means no more 2B amp power supplies.

The system is fully expandable to 65K via an edge connector which carries both the address and data busses, power supplies and all timing signals. All dynamic memory refreshing for both on and off-board memory is done automatically Also, the Apple Computer can be upgraded to use the 16K chips when they become available. That's 32K bytes on-board RAM in 16 IC's—the equivalent of 256 2102's!

A Little Cassette Board That Works!

Unlike many other cassette boards on the marketplace, ours works every time. It plugs directly into the upright connector on the main board and stands only 2" tall. And since it is very fast (1500 bits per second), you can read or write 4K bytes in about 20 seconds. All timing is done in software, which results in crystal-controlled accuracy and uniformity from unit to unit.

Unlike some other cassette interfaces which require an expensive tape recorder, the Apple Cassette Interface works reliably with almost any audio-grade cassette recorder.

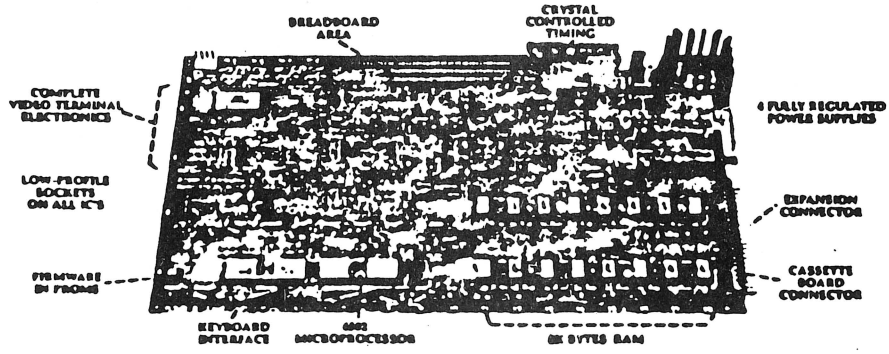
Software:

A tape of APPLE BASIC is included free with the Cassette Interface. Apple Basic features immediate error messages and fast execution, and lets you program in a higher level language immediately and without added cost. Also available now are a dis-assembler and many games, with many software packages, (including a macro assembler) in the works. And since our philosophy is to provide software for our machines free or at minimal cost, you won't be continually paying for access to this growing software library.

The Apple Computer is in stock at almost all major computer stores. (If your local computer store doesn't carry our products, encourage them or write us direct). Dealer inquiries invited.

Byte into an Apple $666.66*

*includes 4K bytes RAM



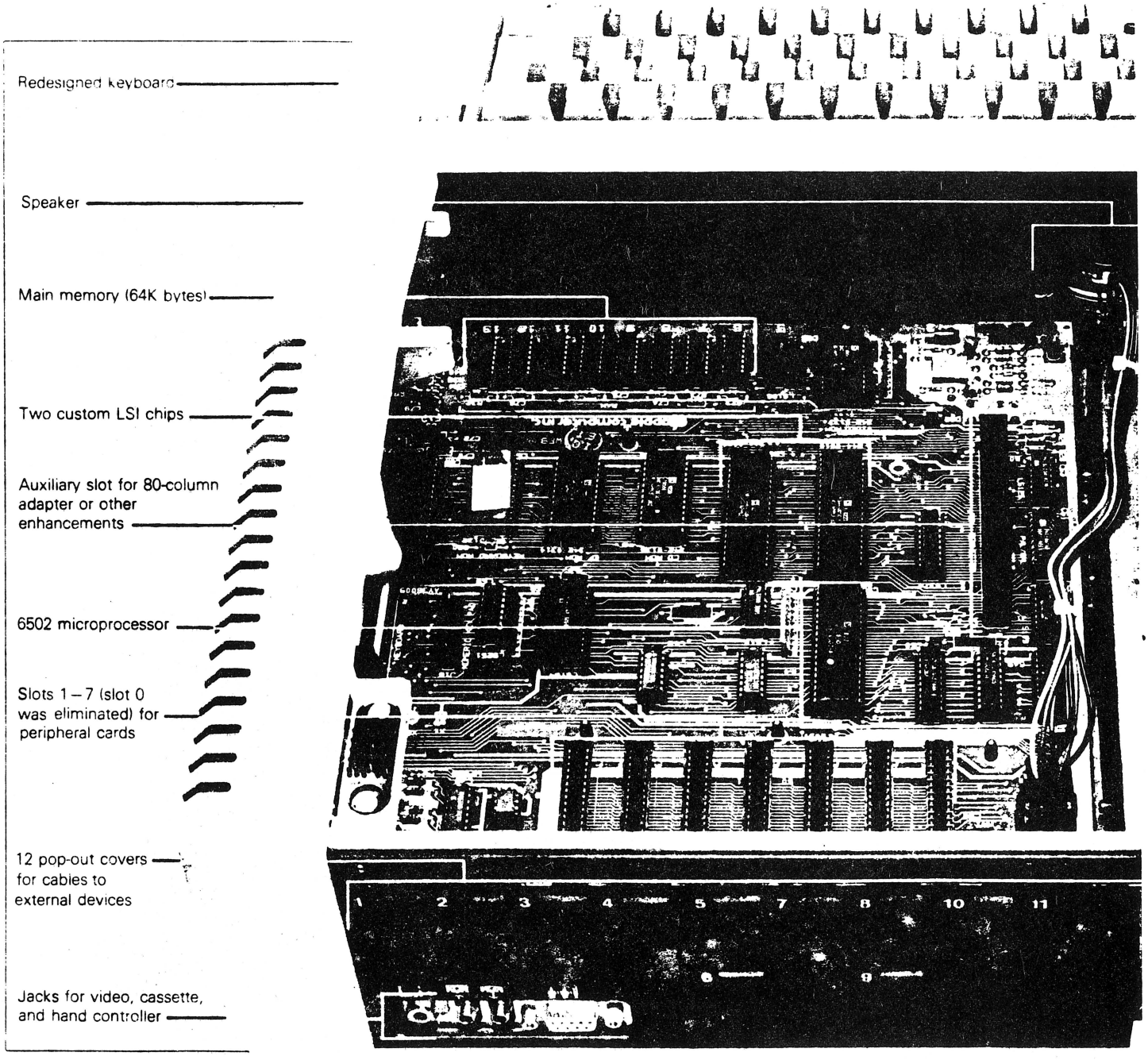
APPLE Computer Company • 770 Welch Rd., Palo Alto, CA 94304 • (415) 326-4248

From "Adam & Eve" newsletter of the Apple II Users' Group -Madison, Wisconsin (May, 1981)

system, Color graphics and sound capabilities, Multi-purpose video and memory expansion slot.
- Seven I/O expansion slots, Slot 0 is now located off to the side and is considered an auxiliary slot to be used for an 80 column board which has an additional 64K RAM for bank select, Cassette interface, D-9-style I/O connector (for hand controls).
- Back panel using D-style connectors
- Lockable case lid
- Chip set down from 130 ICs to 30 ICs, using same power supply.
- 98% compatibility with APPLE II software.

In response to questions from the audience, Keith Fox made the following additions. Since

continued on next page


Redesigned keyboard
Speaker
Main memory (64K bytes)
Two custom LSI chips
Auxiliary slot for 80-column adapter or other enhancements
6502 microprocessor
Slots 1–7 (slot 0 was eliminated) for peripheral cards
12 pop-out covers for cables to external devices
Jacks for video, cassette, and hand controller

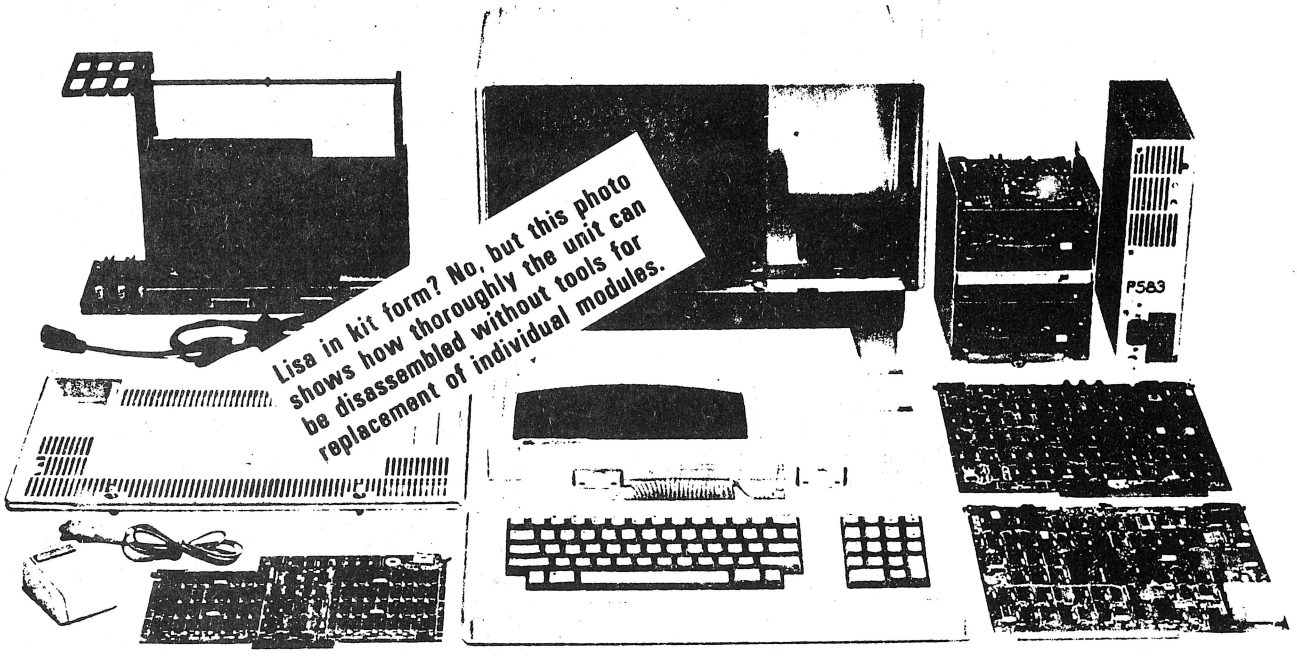
the size of the slots in the backplane has been standardized some boards developed for the APPLE II will need adaptors to run on the APPLE IIe. There is some present software which is being upgraded to take advantage of the APPLE IIe features, namely APPLEWRITER II and QUICK FILE II.

Suggested retail prices:
- $ 295.00 for the 80 Col. board with the additional 64K.
- $1395.00 for the APPLE IIe alone
- $1995.00 for the APPLE IIe bundled system which includes the APPLE IIe console, Monitor, Monitor stand, Disk Drive, and an 80 col. board (not to be confused with the 80 column board which has an added 64K).

The LISA -

After showing a video tape of the LISA, Keith and Stacey gave an overview of the goal of this system and listed some system specifications. In summary, the LISA is being promoted as an office system and is being sold as a software/hardware package for a price which was indicated as being under $10,000. System features include:
- 16 bit CPU (M68000)
- One MByte of memory
- Dual disk drives, using APPLE's own 5 1/4 inch floppies, (These are 871KByte drives), and one 5MByte hard disk.
- Detachable keyboard with numeric keypad.
- A cursor positioning "mouse"
- Two serial ports (One RS232), and one parallel port.
- The LISA Operating System ("UNIX-like with enhancements")
- Six applications packages including LISA Calc, LISA Writer, a Graphics Editor, a Product Scheduling Package, and two others.

Keith Fox stated that a number of programming languages will be available on this system including PASCAL, COBOL, and a "DEC-like" BASIC.


Lisa in kit form? No, but this photo shows how thoroughly the unit can be disassembled without tools for replacement of individual modules.
P583

March 1983 Popular Computing

Photograph by Mike Bu

WORD HANDLER II™ REVIEW
BY Roland E. Guilbault

This article is a review of the word processor marketed by Silicon Valley Systems, Inc., 1625 Camino Real, Suite 4, Belmont, CA 94002; (415) 593-4344. The **Word Handler II™** retails for $199. I was interested in this word processor because of the minimum system which is required to use it.

As a minimum you must have an Apple II with 48K, one disk drive and a printer. It was designed to be used on the basic Apple II. However, it is advertised to work with keyboard modifications. It does not require 80-column cards because it uses the high resolution graphics screen.

Even though the **Word Handler™** word processing system was designed to run on the basic system, it provides big system word processor capabilities. One such feature is the use of direct-to-disk processing. This allows the document size to be limited only by the capacity of disk storage rather than the Apple's main memory. The human engineering that went into the user interfaces is of high quality. For example, all file change instructions are two step operation, thus avoiding accidental deletion of wanted files.

The **Word Handler™** after being brought up is in what is called its "idle state". From this state you perform all file manipulations, generation of new files (documents), and printing. When a function is completed, the processor returns to this idle state. Exit from the program is not described in the documentation. At first I thought that you had to power down the Apple. After a complaint to the sales representative, I found that the program does a system boot if you hit the reset while it is doing a catalog (or index as it is called by the program). This is not such an obvious feature, but it will be a big savings on the power switch wear.

All text inserting and editing functions are done via control keys. The mnemonics are very well chosen to facilitate recalling their function. There are twenty-three control keys in all. Five of them are slightly different in the insert mode than in the edit mode. Eight control keys function only in the edit mode and one only in the insert mode. Some of the control keys are the run of the mill text editor function. However, those that make the **Word Handler™** different from the rest are the **bold**, underline and superscript functions. They may be done alone or in any combination.

You can also move forward or backward by character, word, line or page, but you may not move directly to the beginning or end of the document. You can move by a global search to any word or word phrase but not to any character or part of a word. Not having this capability is a draw back when used with spelling programs which mark words to be corrected. Words or phrases may be located and replaced on operator approval. Blocks of text may be deleted, copied or moved within the document or between documents.

The **Word Handler™** has two modes of display. One mode is a full 66 character width which is the width one would normally use for 8-1/2 in. paper. This display may be used when starting a document and before printing. For proofreading the use of the 40 character display, which folds the longer lines, is more readable. The text is easier to read in this

continued on next page

mode on a television. I have not used or seen this word processor on a monitor. After proofreading, a final check of the document in the 66 column screen display can be done to make final corrections and touch ups before printing. It is a joy to be able to print a document and have it come out correctly the first time!

There are many canned printer interfaces with this program. They include MX80/MX100, Qume, Diablo, TEC and IDS 560/450. These printers may be in any slot and may have either serial or parallel interfaces.

The **Word Handler**tm has a status line which is always on the screen. This line contains the document name, page number presently being displayed and the cursor status. The status lets you know if bold, superscript, case change and/or underline are on. Paragraph justification is also displayed. You may have left or full justification on a paragraph by paragraph basis.

Silicon Valley Systems' policy is quite good. They offer a 30 day money back offer, life time replacement of a damaged word processor disk, and life time updates of the program as future modifications become available. They also provide a telephone number from which they accept collect calls to answer any questions or problems about the processor.

The documentation provided is very good. It is divided into two parts. One section is a tutorial. The other is a reference guide for each command. They have also provided a reference card. Once you know the program the card is all that is needed for day to day operations. It is stated in the tutorial section that the print function works in the single sheet mode only. The reference guide section erroneouslu states that a response of "C" will produce continuous output. This statement is an error. There is no continuous output mode.

Another feature provided by the **Word Handler**tm is folded sheet printing and mirror image margins. These features are a great help in producing documents such as this article. The folded sheet allows the printing of two pages on one side of a sheet. The sheet may then be folded to give a four page document. The mirror image margins allow alternating a large and small margin so that then large margins end up on the same edge of the sheet when printing on both sides. This allows the sheets to be inserted in a binder.

The **Word handler II**t also has a form fill capability. This capability allows you to define as many different 'fill-in' words as you would like within a document. The "form fill-in" mode interfaces with the **List Handler**t. This feature allows you to fill-in the letters with items from the data base of the **List Handler.**

Future updates. The following list of changes are promised for early 1983:

a) multi-copy printout
b) continuous printout
c) saved tabs
d) embedded margins
e) subscripting, and
f) bold in the edit mode.

The following change is promised for late 1983:

a) embedded printer control characters.

I reviewed this program using the CALL A.P.P.L.E. word processor evaluation guide. The outline follows the narrative part of this review. The test text used for timing measurements was the Gettysburg Address repeated five times on five consecutive pages. The search test was for the last

word of the address "earth". The replace timing test was made by changing "earth" to "planet" in all five copies.

Needless to say, I am very pleased with this word processor and the support provided by Silicon Valley Systems.

TIMING (in seconds):

Initial Boot	11
Retrieve Text	5
Store Text	4
Search	2
Search & Replace (not auto)	14

PRINTING:

Go to print mode from **editor**	0
Go to **editor** mode from **print** mode	0
Print time for test document (about 8,000 characters)	369

3 KEYSTROKES REQUIRED:

Search	1
Search & Replace	req. operator each occurrence
Change a letter	0

INITIAL REQUIREMENTS:

Program cost	$199
RAM	48K
Applesoft ROM	
Lower case adapter	Opt.
Number of disk drives	1+
Other Hardware Modifications	opt.
80-column card	N.A.
Z-80 Softcard	
RAM Board	
Special printer	
Special interface card	

TEXT INPUT FEATURES:

1.1 Upper/Lower case display	
Upper case only	
Inverse upper case	
Hardware adapter	opt.
High resolution screen	X
1.2 Shift key operator	
Escape key sequence	X
Control key	
Equipment modification	opt.
Other keys used	
1.3 Shift lock operator	
Escape key sequence	
Control key	X
Equipment modification	
Other keys used	
1.7 Automatic formatting of words:	
Moves full word to next line	X
Automatic indentation	
First line of new paragraph	
Temporary for full paragraph	
Hyphenation	
Prompt only	
User approves each case	
Fully automatic	
1.8 Tabbing	
Available	X
Text shows effects during entry	X
Justification	
Left	X
Right	X
Center	one line at time
Decimal point	
1.9 Status display for:	
Current operation mode	X
Cursor at column "n"	
Cursor at text line "n"	
left margin	X
Right margin	X
Top margin	X
Bottom margin	X
Tab stops	X
Page breaks	X
1.10 Reset page specifications in text	
Margins	
Tabs	X
Page breaks	X
1.11 Accept text file it didn't create	opt.
1.12 Accept text from telecommo. port	
1.14 Formatting for text Output	
Center lines	X

continued on next page

Underline	X
Bold print	X
Alternate color ribbon	
Two-pass printing	
Supper-script/Sub-script	supper
1.A Automatic checking for spelling	
1.B Maximum text length in one file	123K
1.C Drop characters for fast typist	
EDITING	
2.1 Underlying document format	
Line oriented editing	
Auto adjust sub-segment lines	
Document oriented editing	X
Insert text at cursor position	X
Delete text from cursor by:	
Character(s)	X
Word	X
Sentence	
Paragraph	X
Document page	X
End of document	
Beginning of document	
Screen line	X
Top of screen page	
Text marker	
Automatic adjustment of text:	
On screen	X
In document	X
2.2 Cursor positioning moved by:	
2.2.1 Character	
Multiple characters	
Word	X
Sentence	
Paragraph	X
Document page	X
End of document	
Beginning of document	
Screen line (document)	X
Line number	
Top of page	X
Bottom of page	X
Scroll forward through text	
2.2.2 Copy text within file	X
Move text within file	X
Save portion of text to new file	X
Insert text from another file	X
2.2.3 Search and replace	
Search only	
Command finds and displays:	
First occurrence	
All occurrences	X
"n"th occurrence	
Search and replace	
Command Replaces:	
First occurrence	
All occurrences	X
"n" occurrences	
Action completed:	
Automatically	
Manual override	X
2.4 Operates on multiple file document	
2.6 Can edit:	
Page breaks	X
Page number location	X
Headers (page title) location	X
Date	
2.7 Columnar editing	
Swap columns	
Addition checking	
2.8 Are edit macros available for:	
Inserting formatting/ printer commands	
Inserting phrases into the text	
2.A Indices capability	
Automatically creation of indices	
TEXT STORAGE AND RETRIEVAL	
3.1 Uses	DOS 3.3
3.4 Program accessible for modification	
3.5 Program back-up	
Disk copyable by std. copy utility	bach-up given
3.6 Text file back-up	
Prompts user	
Automatic procedure	
Can use std. disk copy	

utilities	X
1-drive copy program provided	X
2-drive copy program provided	X
3.7 Form letter capability	
Included in basic program	X
Extra cost item	
3.8 Text file documentation	
Length of document title	30
Content description phrase	
Allowed	X
Length of phrase (part not used for title)	
Indication of document author	
Dating	
Document originates	
Document last worked on	
Total time document worked on	
Size of the document	
3.9 Amount of text actively in memory	9-10K
3.A Does the program support:	
D.I.F. data format	Opt.
Other data formats	

OUTPUT

4.1 Printer configuration:	
Automatic	
Semi-automatic: choices from list	X
Prompts operator in detail	
User changes lines in program	
4.2 Printer control	
Incremental spacing	X
Top-of-form alignment	X
Tabbing	
Change print fonts in document:	
Pause for print wheel exchange	
Reconfigure dot-matrix on fly	X
4.2.1 Letter space Justification	
4.2.2 True proportional spacing	X
4.4 Forms control	
continuous form	X
Single sheet	X
Variable length	X
4.5 Page numbering	
Suppressed any page	X
Continue an page	X
Chapter relative	
4.6 Footnotes	
Completely automatic	
Semi-automatic	
4.7 Responds to printer problems	
Out of paper	
Out of ribbon	
Other	
4.8 Print spooling	
Can print a file while editing another	
4.A Screen preview of final document:	
Maximum line length displayed	66
With scrolling for whole line	splits
Pause key	
Auto-pause at page breaks	
Escape from viewing entire text	X
Edit page breaks at this time	
4.B Chain file into one document (automatically)	

HUMAN ENGINEERING

5.1 Mnemonic quality of commands	excellent
5.2 Verifies dangerous commands	
Delete document file	X
Save file with same name	not allowed
Quit program	"
Clear memory space for new text	"
Load file that overwrites memory	"
5.3 Recover from command error	
Unwanted deletion of text	
Unwanted deletion of file	

continued on next page

5.4 Operator assistance
Operation and error messages
English
Computer jargon
Numbers only for table look up
Help file on-line
5.5 Structure of program
Separate edit and print programs
5.6 Emergency recovery provided for:
System crash - Not power outage
Memory full error N.A.

DOCUMENTATION AND ASSISTANCE

6.1 Allows program to be used easily by:
Average computer hobbyist
Apple user (not hobbyist)
Average clerical personnel X
6.2 Identifiable documentation parts
Intro.-Program purpose & theory +
Tutorial
Written - using examples +
Computer assisted instruction
Each function-detail description +
Technical Data
System requirements +
Structure of files
Interfacing with peripherals
Annotated source program listing
Full listing
Part: for user modifications
Index to documentation O
Quick reference
Specific section in manual +
Pocket reference card +
Keyboard function card
Keyboard key function labels
On-line screen display
6.6 program supported by telephone X

NOTES:
Numbers in left column refer to word processor evaluation criteria published in **Call - A.P.P.L.E.**, September, 1980.
A letter suffix indicates an addition since September, 1980.
Also see reviews in September 1981 and July 1982 issues.

Key
X = Characteristic present
R = Required
Opt. = Optional
+ = Good
O = Acceptable
- = Poor
blank = characteristic not present or not applicable

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MACHINE LANGUAGE SPOKEN HERE

By Dr. J

The doctor is in.

In last month's column we extended our investigation of Applesoft's internal routines with a look at the single argument floating point math routines. The single argument math routines, as you will recall, operate on the floating point number stored in the floating point accumulator, 'FAC', and store the result back in FAC.

This month we will complete our examination of the single argument routines by looking at the floating point utilities. Unlike the math routines, the utilities are not limited to the FAC, but can operate on the 6502's three registers ['X-reg', 'Y-reg', and 'ACC'] as well. This discussion will not be all-inclusive; Applesoft supports over 21 floating point utilities although we will look at only nine of them. These nine, however, will suffice for the next several months.

As with all the routines we have seen to date, you can invoke these nine by simply making a subroutine call to the particular entry point. Briefly, these routines are:

SIGN: Sets ACC according to the value of FAC. On exit ACC = 1 if FAC is positive; ACC = 0 if FAC is zero; and ACC = -1 if FAC is negative. This routine resides at $EB82.

FOUT: Creates a string equivalent to the value of FAC. On exit Y,ACC point to the string [which ends in zero] and FAC is scrambled. This routine resides at $ED34.

FCOMP: Compares FAC and a number in memory pointed to by Y,ACC. On exit ACC = 1 if (Y,ACC) < FAC; ACC = 0 if (Y,ACC) = FAC; and ACC = $FF if (Y,ACC) > FAC. This routine begins at $EBB2.

NEGOP: Changes the sign of FAC. Upon completion FAC = -FAC. This routine resides at $EED0.

SNGFLT: Floats the unsigned integer stored in Y. When finished FAC = FLOAT (Y). This routine resides at $E301.

GIVAYF: Floats the signed integer in ACC,Y. On exit FAC = FLOAT (ACC) * 256 + FLOAT (Y). This routine begins at $E2F2.

FLOAT: Float the signed integer in ACC. On exit FAC = FLOAT (ACC). This routine resides at $EB93.

CONINT: Converts FAC into a single byte number which is stored in both the X-reg and memory location $A1. On exit X = INT (FAC). This routine resides at $E6FB.

PRNTFAC: Prints the current value of FAC. Upon completion FAC is scrambled. This routine resides at $ED2E.

For example, we can print the current value of FAC with the

continued on next page

machine language subroutine call:

```
JSR $ED2E
```

[Now for a real cop-out!!] I couldn't think of any ingenious programs to demonstrate these routines: by themselves these utilities are not much to shout about. All of this has not been in vain; we will call on them in subsequent columns.

I do not want you to think I didn't think of a little exercise this month; I did. Yes sir campers, this month's exercise is to create a separate file on your disk containing assembly **EQU**ate directives for all the routines we have examined to date. [Wow Dr. J., that's just like putting coal in my stockings; thanks!!] Now, I'm not bucking for 'Column Of The Year Award' with this month's goodie, but you have my assurance you will appreciate having this 'boiler plate' file on hand and not having to type in the EQU directives from scratch every time we launch into new routines.

- - - - - - - - - -

Next month we will finally leap [stumble?] into the long awaited foray into the use of floating point arrays from machine language. Till then, good luck!

The doctor is out.

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```
1   REM   TOM MCDONALD
2   REM   11/18/82
3   REM   ONE-LINER
4   REM
5   REM
10   HGR2 : FOR I = 1 TO 30:H =  RND
      (1) * 6 + 1: HCOLOR= H:X =  RND
      (1) * 220 + 30:Y =  RND (1) *
      140 + 30:S =  RND (1) * 23 +
      4: HPLOT X - S,Y + .75 * S TO
      X,Y - S TO X + .75 * S,Y + .
      75 * S TO X - S,Y - .25 * S TO
      X + S,Y - .25 * S TO X - S,Y
       + .75 * S:F =  PEEK ( - 163
      36): NEXT I: FOR J = 1 TO 10
      00: NEXT J: GOTO 10
```

]

```
SOURCE FILE: APPLESOFT EQUATES

0000:                1 ;**********************
0000:                2 ;*                    *
0000:                3 ;*  APPLESOFT INTERNAL *
0000:                4 ;*     ENTRY  POINTS  *
0000:                5 ;*                    *
0000:                6 ;**********************
0000:                7 ;
0000:                8 ;TWO ARGUMENT FLOATING POINT OPERATORS
0000:                9 ;
E97F:               10 FMULT   EQU  $E97F    ; ARG = (Y,A) : FAC = ARG * FAC
E982:               11 FMULTT  EQU  $E982    ; FAC = ARG * FAC
E9A6:               12 FDIV    EQU  $E9A6    ; ARG = (Y,A) : FAC = ARG/FAC
E9A9:               13 FDIVT   EQU  $E9A9    ; FAC = ARG/FAC
E7BE:               14 FADD    EQU  $E7BE    ; ARG = (Y,A) : FAC = ARG + FAC
E7C1:               15 FADDT   EQU  $E7C1    ; FAC = ARG + FAC
E7A7:               16 FSUB    EQU  $E7A7    ; ARG = (Y,A) : FAC = ARG - FAC
E7AA:               17 FSUBT   EQU  $E7AA    ; FAC = ARG - FAC
EE97:               18 FPWRT   EQU  $EE97    ; FAC = ARG RAISED TO THE FAC POWER
0000:               19 ;
0000:               20 ;FLOATING POINT NUMBER MOVE ROUTINES
0000:               21 ;
EAF9:               22 MOVFM   EQU  $EAF9    ; FAC = (Y,A)
EB2B:               23 MOVMF   EQU  $EB2B    ; (Y,X) = FAC
EB53:               24 MOVFA   EQU  $EB53    ; FAC = ARG
EBA3:               25 MOVAF   EQU  $EBA3    ; ARG = FAC
E9E3:               26 CONUPK  EQU  $E9E3    ; ARG = (Y,A)
0000:               27 ;
0000:               28 ;SINGLE ARGUMENT FLOATING POINT MATH ROUTINES
0000:               29 ;
EB90:               30 SGN     EQU  $EB90    ; FAC = (1,0,-1) IF FAC >, =, < 0
EBAF:               31 ABS     EQU  $EBAF    ; FAC = ABS(FAC)
EC23:               32 INT     EQU  $EC23    ; FAC = INT(FAC)
EE8D:               33 SQR     EQU  $EE8D    ; FAC = SQR(FAC)
E941:               34 LOG     EQU  $E941    ; FAC = LOG(FAC)
EF09:               35 EXP     EQU  $EF09    ; FAC = EXP(FAC)
EFAE:               36 RND     EQU  $EFAE    ; FAC = RND(FAC)
EFEA:               37 COS     EQU  $EFEA    ; FAC = COS(FAC)
EFF1:               38 SIN     EQU  $EFF1    ; FAC = SIN(FAC)
F03A:               39 TAN     EQU  $F03A    ; FAC = TAN(FAC)
F09E:               40 ATN     EQU  $F09E    ; FAC = ACTAN(FAC)
0000:               41 ;
0000:               42 ;SINGLE ARGUMENT UTILITIES
0000:               43 ;
EB82:               44 SIGN    EQU  $EB82    ; A = (1,0,$FF) IF FAC >, =, < 0
EBB2:               45 FCOMP   EQU  $EBB2    ; A = (1,0,$FF) IF FAC >, =, < (Y,A)
EED0:               46 NEGOP   EQU  $EED0    ; FAC = -FAC
E301:               47 SNGFLT  EQU  $E301    ; FAC = FLOAT(Y)
EB93:               48 FLOAT   EQU  $EB93    ; FAC = FLOAT(A)
E2F2:               49 GIVAYF  EQU  $E2F2    ; FAC = FLOAT(A) + 256 * FLOAT(Y)
E6FB:               50 CONINT  EQU  $E6FB    ; X = INT(FAC)
ED2E:               51 PRNTFAC EQU  $ED2E    ; PRINT FAC: FAC IS DESTROYED
0000:               52 ;
0000:               53 ; INTERNAL LOCATOR ROUTINES
0000:               54 ;
DFE3:               55 PTRGET  EQU  $DFE3    ; READ A VARIABLE NAME AND STORE
0000:               56 ; ITS POINTERS IN Y (HIGH BYTE) AND A (LOW BYTE)
DEBE:               57 CHKCOM  EQU  $DEBE    ; CHECK FOR A COMMA
0000:               58 ;
0000:               59 ; MISC. ROUTINES
0000:               60 ;
DAFB:               61 CROO    EQU  $DAFB    ; PRINT A CARRIAGE RETURN
FC58:               62 HOME    EQU  $FC58    ; CLEAR THE SCREEN
```


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JANUARY DISK OF THE MONTH
by Mike Gooding

This months DOM is from the IAC. This is a hybrid disk configured to support both PASCAL and DOS 3.3 file systems. The first 17 tracks (from 0 to 16) contain PASCAL programs, while the remaining 18 tracks (17 to 34) bear DOS 3.3 programs. Therefore, you connot boot with this disk. Instead, boot with another DOS 3.3 or PASCAL disk first.

Of note are two programs on this disk for the purpose of transfering files between the two file systems: 'HYBRID HUFFIN' which has been modified to work with this hybrid disk, to transfer PASCAL text files to DOS; and the 'PUFFIN' program in PASCAL to transfer files from DOS to PASCAL.

While you will want to delete files from this disk, keep its format as a handy utility to interface between DOS 3.3 and PASCAL.

ADDRESS SEARCH.INSTRUCTIONS
.OBJ
.OBJ0
.SOURCE

A monitor utility for machine language programming used to find calls to a particular subroutine. Given a 2 byte address via the monitor control-y mechanism it will search thru a specified memory range and print out locations where those two bytes can be found. This is particularly handy for prowling about APPLESOFT or DOS. Instructions are provided by runing the APPLESOFT program. Source code is provided in a text file and both relocatable and binary object is included.

APPRINT
APPRINT FILE MAKER
PRETTYPRINT

These programs make up a mechanism to produce properly indented formatted listings of APPLESOFT programs. Load your program, EXEC APPRINT, RUN 30000, reset, then RUN PRETTYPRINT. Your program must have a 'THEN' with every 'IF'. The APPRINT program puts your program into a text file called 'LISTING'.

BENCHMARK

This is a program that computes prime numbers as a measure of computer comparison.

CANYON RUN - COLOUR
SPACE CANYON

Two versions of the same game, one using color, the other text displays. Color is better.

DISK FREE SPACE

Reads the volume table of contents (VTOC) of a disk and formats the free space bit map on the screen.

DISKSCAN
.OBJ1
.OBJ2

Scans a disk and displays readability. Also checks track 35 to see if anything may be recorded there too (some special coding may be there for protection purposes).

ERROR HANDLER

A subroutine designed to assist programming by handling errors in APPLESOFT programs. RUN this program to get instructions on how to install it.

FASTBOOT CREATE
FAST.LOADER
FAST.RWTS

This program set will modify an initialized DOS 3.3 48k slave disk such that it will load a

language card (if one is present) with the appropriate basic as part of the booting process. The disk must be blank except for the 'HELLO' program used to initialize it. Do not attempt to reconstruct the VTOC or the tracks containing basic will be marked free and hence overwritten.

GETFILE
GETFILE INFO
.OBJ
GETSECT
.OBJ
The INFO program is provided to demonstrate how to use the 'GETFILE' machine code utility published in CALL-APPLE. The source code provided has been modified to give not only DOS file names, but also separate source code and objects are included to give sector count. Source is compatible with DOS Toolkit's assembler.

HELLO
Run this after booting with your SYSTEM MASTER first!!!!

HELLO CRAE/APA
A special hello program that sets up the environment for program development using CRAE (Co-Resident Applesoft Editor) and APA (Applesoft Programmer's Assistant). You must have these through other means.

HYBRID HUFFIN
Moves PASCAL files to the DOS 3.3 section of this special hybrid disk.

LAPLACE INVERSION
.DOCUMENT
This program converts an equation in the S-domain to plotted points in the TIME domain. It has application in control theory. A document program can be run to get more info.

LOWERCASE ASSEM LIST.TEXT
A text article on use of the Lazer LSIE.48K input routine in the DOS Toolkit Editor to input lower case into assembly language listings. This file was created using this method. No code included.

MENU MAGIC
A classy menu program made to be customized by including your program names.

MOONLANDING
A hires graphics Lunar Lander game.

MORSE CODE
.OBJ
A program to help you bone up on your Morse code competency.

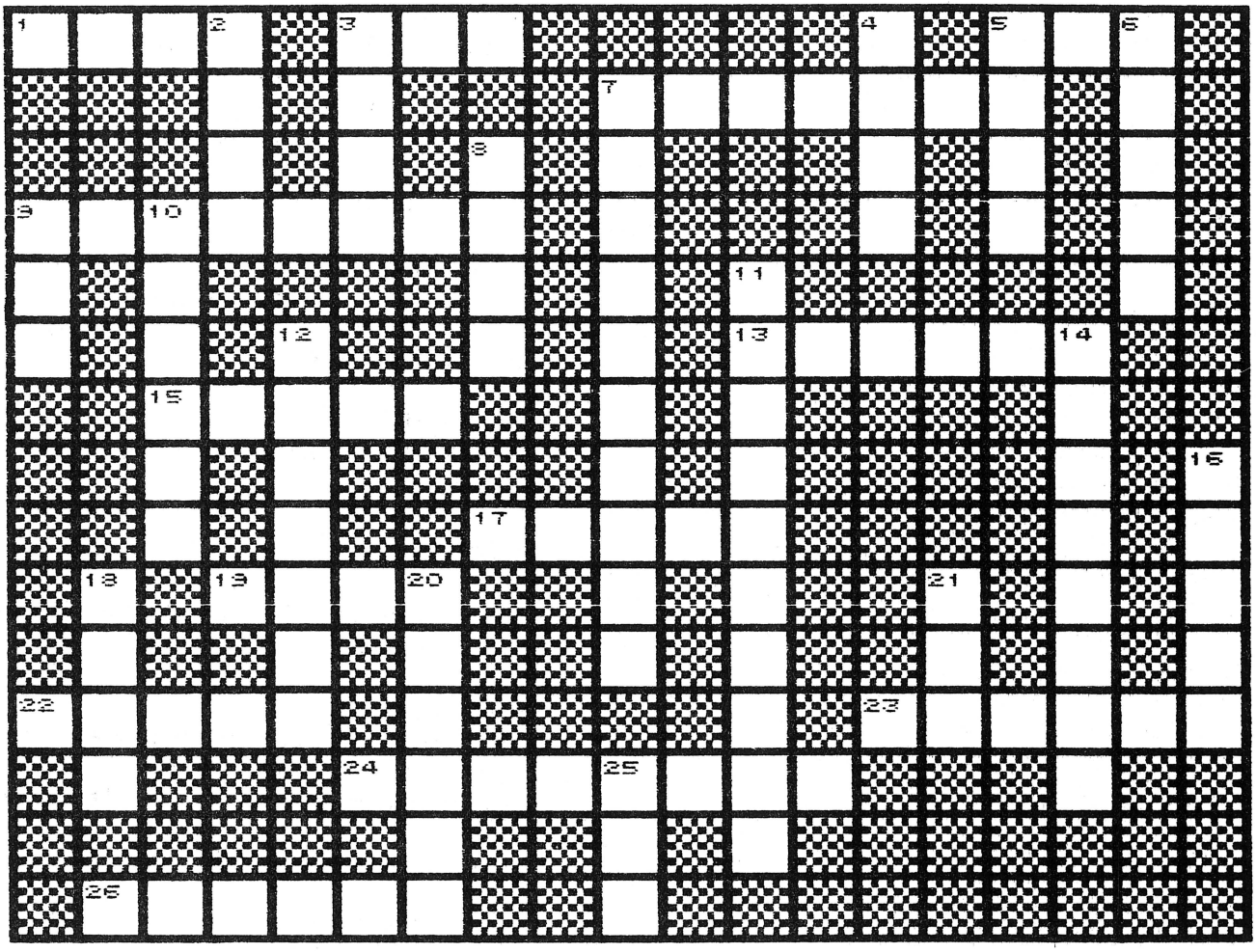
SHUFFLE
A cute display program that puts out an interesting dynamic text display combining words entered.

<<<< PASCAL DISK SECTION >>>>

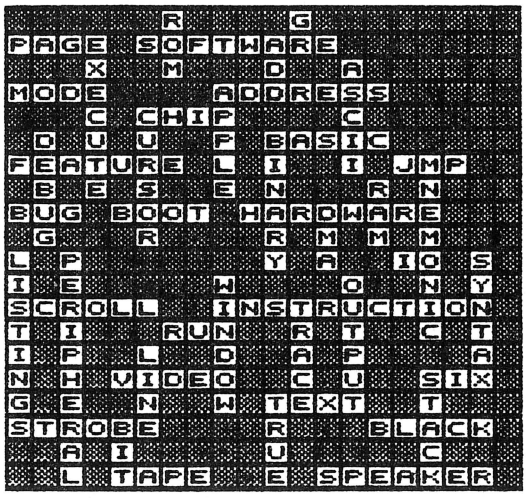
CATALOG.TEXT
.CODE
EXPLAIN.TEXT
This is a master cataloging program for PASCAL disks. Search and automatic replace modes are options. Capacity is 2048 entries. EXPLAIN.TEXT gives some info.

TRANSFER.TEXT
PUFFIN.TEXT
.CODE
Transfers programs from the DOS 3.3 section of this hybyid disk to the PASCAL section.

DOS TERMS



JANUARY'S SOLUTION:
Apple Basics



ACROSS CLUES

1. DISK ---- OCCURS WHEN DOS ATTEMPTS TO STORE INFO ON DISK AND FINDS NO MORE SPACE.
3. THE TRACK --- MAP IS USED TO KEEP TRACK OF EACH SECTOR AS THEY ARE ALLOCATED AND DEALLOCATED.
5. DOS COMMAND TO ENTER INTEGER BASIC.
7. MAXIMUM NUMBER OF FILES THAT DOS WILL ALLOW TO BE ACTIVE AT ONE TIME.
9. REMOVABLE STORAGE MEDIA.
13. ACCESS METHOD PROVIDING FAST ACCESS TO RECORDS OF FIXED LENGTH; MAY WASTE SPACE.
15. THERE ARE 35 OF THESE ON AN APPLE DISK; 3 FOR DOS; 1 FOR DIRECTORY; 31 FOR YOU.
17. THIS MAKES THE WORLD (OF DATA) GO 'ROUND.
19. BEST TO KEEP YOUR DISKS AWAY FROM THIS.

ACROSS CLUES (continued)

22. WHEN A FILE IS DELETED, DOS SIMPLY ----- THE DIRECTORY ENTRY TO SHOW THAT SPACE IS AVAILABLE.
23. THIS COMMAND ALLOWS YOU TO ADD DATA TO THE END OF A SEQUENTIAL TEXT FILE.
24. THIS IS THE FIRST PROGRAM TO BE RUN AFTER DOS IS LOADED.
26. THIS COMMAND WILL TELL YOU IF A FILE IS INTACT ON THE DISK AND CAN BE READ WITHOUT ERROR.

DOWN CLUES

2. YOU SHOULD USE THIS COMMAND TO PROTECT THOSE FILES WHICH DO NOT NEED TO BE WRITTEN TO.
3. DO THIS TO ADD DOS TO THE BASIC THAT IS IN MEMORY.
4. THIS TYPE OF FILE CANNOT BE ACCESSED WITH LOAD OR RUN.
5. THIS HOUSEKEEPING COMMAND GETS THE DISKETTE READY TO USE BY ADDING DOS AND A DIRECTORY.
6. IF YOU HAVE USED THIS ONE FOR DEBUGGING IN BASIC BUT HAD TROUBLE W DOS TRY SOME RETURNS.
7. INFO IN THESE FILES IS MEANT TO BE RETRIEVED IN A LINEAR FASHION.
8. WHEN YOU CLOSE THE DOOR ON THE DRIVE THIS TOUCHES THE BOTTOM OF THE DISK FOR READING AND WRITING
9. RHYMES WITH BOSS
10. 3.2 HAS ONLY 13 BUT THE PASCAL SYSTEM GAVE US 16 FOR 3.3
11. THE WRITE ENABLE NOTCH MAY BE COVERED WITH A TAB THUS ---------- THE ENTIRE CONTENTS.
12. MOTORS, TABLETS, AND YOUR TV ALL HAVE THESE AND THEY WILL MAKE WEAK BITS OUT OF STRONG ON DISKS
14. THIS COMMAND CONTROLS THE NUMBER OF FILES THAT CAN BE OPEN AT ONE TIME. WHEN YOU BOOT DOS IT IS 3.
16. ONE OF THREE COMMANDS FOR DEALING WITH MACHINE LANGUAGE FILES.
18. TRANSFERS APPLESOFT AND INTEGER PROGRAMS TO MEMORY.
20. IF YOU FEEL LIKE TYPING DOS WILL TAKE A NAME THIS LONG.
21. DOS NEEDS TO LOOK AT THIS TRACK BIT --- TO FIND EMPTY SPACE ON THE DISK.
25. THIS GOES OVER THE NOTCH TO PROTE CT YOUR DATA FROM BEING DELETED OR OTHERWISE WRITTEN ON BY DOS.

```
]LIST

20  REM  COMMA INSERTER
25  REM  INPUT A, ANY NUMBER
27  REM  OUTPUT A$, A W/ COMMAS
28  REM  INSERTED
29  REM  FRACTIONAL PORTION
30  REM  TRUNCATED
31  REM
40  INPUT "GIVE ME A NUMBER?";A
50  GOSUB 1000: PRINT A$: GOTO 40

999  REM
1000 A$ =  STR$ ( ABS ( INT (A)))
     : IF  ABS (A) > = 1E9 THEN
     1050
1010  IF  ABS (A) < 1000 THEN 105
     0
1020 A$ =  LEFT$ (A$, LEN (A$) -
     3) + "," +  RIGHT$ (A$,3): IF
      ABS (A) < 1000000 THEN 1050

1030 A$ =  LEFT$ (A$, LEN (A$) -
     7) + "," +  RIGHT$ (A$,7)
1040  IF A < 0 THEN A$ = "-" + A$

1050  RETURN

]



 ]LIST

 10  REM  DOLLARS & CENTS
 20  REM  FORMATER
 30  REM
 40  REM  INPUT:A, ANY NUMBER
 50  REM  -99,999.99 TO 99,999.99
 60  REM  OUT:A$, 9 CHAR STRING
 70  REM
 90 Z = 100.00001
 100  INPUT "GIVE ME A NUMBER?";A
 110  GOSUB 30000: PRINT A$: GOTO
      100
 120  REM
 30000 B$ = "": IF A < 0 THEN B$ =
      "-"
 30010 A$ =  RIGHT$ ("     " + B$ +
       STR$ ( INT ( ABS (A))),6) +
       "." +  RIGHT$ ("0" +  STR$ (
       INT ( ABS (A) * Z)),2): RETURN



 ]
```

Note Trespassing
a review
by Jeanette Fagone

Capsul Report:
Publisher: Notable Software
Cost: $25.00
Format: DOS 3.3

The program abstract indicates that a beginner will quickly learn how to read music and that advanced musicians can practice sight reading and learn other clefs.

Musical notes must be matched by their letter names as they fly by on the staff and fly by they do. Even on easy it is difficult for the beginner to identify, match, and erase the note as it passes by.

The program was evaluated by the music teachers in one of our local schools and found to be sadly lacking. Their comments are as follows:

1. Does not teach anything
   no history of notation - i.e. 11 lines to 2 sets of five.
   no definition or purpose of clef
   no explanation of movable clef
   use of only 1 rest - unmusical & incomplete
2. Tests your reflexes on paddle more than your ability to read music
3. Doesn't work - letters don't turn, notes don't erase with a match, too fast

P.S. Just a drill And not very good at that.

Editors Note:

I am sorry if the press release printed in the October issue of this newsletter persuaded any of you to purchase this package and will make it our policy not to print releases unless we have done an evaluation prior to publication.

CALENDAR
Compiled by Raines Cohen

Feb 12 10:00AM
North Shore Apple Group
Computer City,Danvers
call 546-3104

Feb 14 6:30PM
Apple/Boston
B.U,Sherman Union
call 227-9178

Feb 16 7:30PM
New England Apple Tree
Mitre Cafeteria
call 497-9050

Feb 19 9:30AM
Apple Guild
Massasoit Community College
call 767-1303

Feb 23 7:30PM
Boston Computer Society
New England Life Hall
call 227-9178

Feb 24 7:30PM
PASCAL Boston Computer Society
MIT 1-146
call 227-9178

Feb 26 2:30PM
Newton Apple Kids
Raines Cohen's House
call 965-0033

Mar 7 7PM
NEAT Steering Committee Meeting
Jerry Connelly's Office
call 497-9050

Mar 12 10:00AM
North Shore Apple Group
Computer City,Danvers
call 546-3104

Mar 14 6:30PM
Apple/Boston
B.U,Sherman Union
call 227-9178

Mar 30 7:30PM EXCEPTION
New England Apple Tree
Mitre Cafeteria
call 497-9050

Mar 19 9:30AM
Apple Guild
Massasoit Community College
call 767-1303

March 23 7:30PM
Boston Computer Society
New England Life Hall
call 227-9178

March 24 7:30PM
PASCAL Boston Computer Society
MIT 1-146
call 227-9178

Mar 26 2:30PM
Newton Apple Kids
Raines Cohen's House
call 965-0033

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Pascal	I	II	III	IV	V	VI						
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D.O.M.1981	J	F	M	A	M	J	J	A	S	O	N	D
D.O.M.1982	J	F	M	A	M	J	J	A	S	O	N	D

All D.O.M.'s up to the current month $5.00 picked up, $6.50 mailed. The current D.O.M. is copied free on your initialized diskette at the meeting.

All catagorized diskettes include a description of the programs and are available for $5.00 if picked up and for $6.50 if they must be mailed.

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PERMIT NO. 57931

ADVERTISING RATES

Single Issue

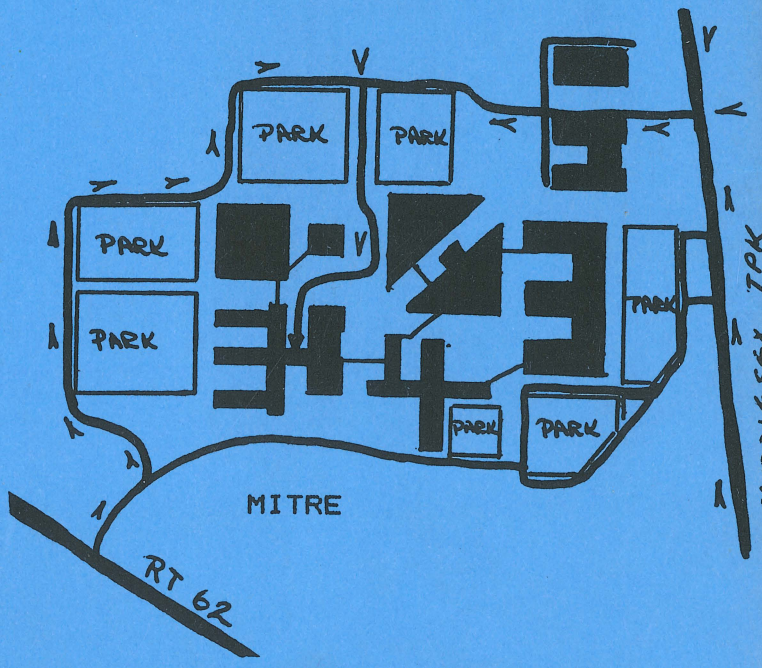
Full Page	$40.00
Half Page	$20.00
Quarter Page	$10.00

3 Month series or Longer

Full Page	$30.00
Half Page	$15.00
Quarter Page	$7.50

Inserts letter size accepted at the same rates, subject to weight limitations.

Personal advertisements of members, e.g., swap notices, personal articles for sale, etc. accepted without charge.

Please send ad copy in black and white (half-tones are permited but no bleeds) by the last Wednesday of the month preceeding the month of issue to:

N.E.A.T. Notes
Attention: Editor
P.O.Box 2652
Woburn, MA. 01801